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MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: May 8, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01K027
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	4 Water Samples
COLLECTION DATE:	November 2, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 11-BCCO-15.0 SDG No.: 01K027
Site: Omega Chem OU-2
Laboratory: EMAX Laboratories, Inc.
Reviewer: Denise McCaffrey, ESAT/LDC
Date: May 8, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	GW401-PP083-0082, GW401-PP084-0047, GW401-PP085-0038, and GW401-PP085-2007
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	SW-846 Method 8260B
Collection Date:	November 2, 2001
Sample Receipt Date:	November 3, 2001
Extraction Date:	Not Applicable
Analysis Date:	November 3 and 4, 2001

FIELD QC:

Trip Blanks (TB):	GW401-PP085-2007
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W:	GW401-PP083-0082, GW401-PP084-0047, GW401-PP085-0038, and GW401-PP085-2007
MBLK2W:	GW401-PP083-0082DL, GW401-PP083-0082DLMS, GW401-PP083-0082DLMSD, GW401-PP084-0047DL, and GW401-PP085-0038DL

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

SAMPLING ISSUES:

Detected results for chloroform are qualified as nondetected and estimated (U,J) due to contamination in trip blank GW401-PP085-2007.

ADDITIONAL COMMENTS:

Sample GW401-PP083-0082 had low internal standard areas in the original, undiluted analysis. The sample was reanalyzed at a dilution due to the high concentration of several target analytes. The diluted analysis had all internal standard areas within QC limits. Results from the diluted analysis only are presented in Table 1A.

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specifies that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analyses were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

Tentatively identified compounds (TICs) were not reported by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs) by SW-846 Method 8260,* Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C, D
LABORATORY BLANKS	YES	
FIELD BLANKS	NO	B
SURROGATES	NO	E
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
MATRIX SPIKE/DUPLICATE	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	NO	H
COMPOUND QUANTITATION	YES	A, F, G
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to trip blank contamination, and are flagged "U,J" in Table 1A.

- Chloroform in samples GW401-PP084-0047 and GW401-PP085-0038

Chloroform was found in trip blank GW401-PP085-2007 at a concentration of 0.64 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in sample GW401-PP083-0082 and method blank MBLK2W

An average RRF of 0.048 was observed for acetone in the continuing calibration performed on November 4, 2001. This value is below the 0.05 validation criterion.

Detected results for the analyte listed above should be considered as the minimum values at which this analyte is present in the samples. Where the results are nondetected, false negatives may exist.

The relative response factor evaluates instrument sensitivity.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in samples GW401-PP084-0047, GW401-PP085-0038, GW401-PP085-2007, and method blank MBLK1W

- Hexachlorobutadiene and 1,2,3-trichlorobenzene in sample GW401-PP083-0082 and method blank MBLK2W

A %D of 51.0% (biased high) was observed for acetone in the continuing calibration performed on November 3, 2001. %Ds of 33.8% and 40.8% (biased low) were observed for hexachlorobutadiene and 1,2,3-trichlorobenzene, respectively, in the continuing calibration performed on November 4, 2001, respectively. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument's performance daily.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}
- 1,1-Dichloroethane, cis-1,2-dichloroethene, and trans-1,2-dichloroethene in sample GW401-PP084-0047
- cis-1,2-Dichloroethene and freon 113 in sample GW401-PP085-0038
- Chloroform in sample GW401-PP085-2007

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

Sample	Surrogate	% Recovery	QC Limits
GW401-PP084-0047	1,2-Dichloroethane-d4	119	85-115
GW401-PP085-0038	1,2-Dichloroethane-d4	125	85-115
GW401-PP085-2007	1,2-Dichloroethane-d4	123	85-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

F. Samples GW401-PP083-0082 was analyzed at a 50-fold dilution due to the high levels of target analytes. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor.

G. Sample GW401-PP084-0047 was analyzed at a 50-fold dilution due to the high levels of 1,1-dichloroethene, trichlorofluoromethane, trichloroethene, tetrachloroethene, and freon 113. Results for 1,1-dichloroethene, trichlorofluoromethane, trichloroethene, tetrachloroethene, and freon 113 are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP085-0038 was analyzed at a 5-fold dilution due to the high level of tetrachloroethene. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

H. Acetone was detected in the sample GW401-PP084-0047 at a concentration of 53 μg/L. However, the presence of acetone cannot be verified by the data reviewer because of the high concentration of freon 113 (550 μg/L) in the sample.

Case No. : 11-BCCO-15.0
Site : Omega Chem OU-2
Lab : EMAX
Reviewer : Denise McCaffrey, ESAT/LDC
Date : May 8, 2002

SDG No. : 01K027

ANALYTICAL RESULTS
Tier 3 Table 1A

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Water Samples for Volatiles by EPA Method 8260B

Station Description :																				
Sample ID :	GW401-PP083-0082			GW401-PP084-0047			GW401-PP085-0038			GW401-PP085-2007 TB			Method Blank MBLK1W			Method Blank MBLK2W			CRQL		
Collection Date :	11/02/01			11/02/01			11/02/01			11/02/01											
Dilution Factor :	50			1			1			1			1			1					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com		Val	Com
1,1-Dichloroethane	50U		F	1.2	J	E	1U			1U			1U			1U			1		
1,1-Dichloroethene	800		F	280		G	1U			1U			1U			1U			1		
1,1-Dichloropropene	50U		F	1U			1U			1U			1U			1U			1		
1,2,3-Trichloropropane	50U		F	1U			1U			1U			1U			1U			1		
1,2,4-Trimethylbenzene	50U		F	1U			1U			1U			1U			1U			1		
1,2-Dibromo-3-chloropropane	100U		F	2U			2U			2U			2U			2U			2		
1,2-Dichlorobenzene	50U		F	1U			1U			1U			1U			1U			1		
1,2-Dichloroethane	25U		F	1.2			0.5U			0.5U			0.5U			0.5U			0.5		
1,2-Dichloropropane	50U		F	1U			1U			1U			1U			1U			1		
1,2-Dibromoethane	50U		F	1U			1U			1U			1U			1U			1		
1,3,5-Trimethylbenzene	50U		F	1U			1U			1U			1U			1U			1		
1,3-Dichlorobenzene	50U		F	1U			1U			1U			1U			1U			1		
1,3-Dichloropropane	50U		F	1U			1U			1U			1U			1U			1		
1,4-Dichlorobenzene	50U		F	1U			1U			1U			1U			1U			1		
2,2-Dichloropropane	50U		F	1U			1U			1U			1U			1U			1		
2-Chlorotoluene	50U		F	1U			1U			1U			1U			1U			1		
Benzene	50U		F	0.6L	J	A	1U			1U			1U			1U			1		
Bromobenzene	50U		F	1U			1U			1U			1U			1U			1		
Bromochloromethane	50U		F	1U			1U			1U			1U			1U			1		
Bromodichloromethane	50U		F	1U			1U			1U			1U			1U			1		
Bromoform	50U		F	1U			1U			1U			1U			1U			1		
Bromomethane	50U		F	1U			1U			1U			1U			1U			1		
Carbon Tetrachloride	25U		F	0.24L	J	A	0.5U			0.5U			0.5U			0.5U			0.5		
Chlorobenzene	50U		F	1U			1U			1U			1U			1U			1		
Chloroethane	50U		F	1U			1U			1U			1U			1U			1		
Chloroform	50U		F	4.6U	J	B	1U	J	B	0.64L	J	AE	1U			1U			1		
Chloromethane	50U		F	1U			1U			1U			1U			1U			1		
cis-1,2-Dichloroethene	50U		F	5.7	J	E	1.2	J	E	1U			1U			1U			1		
Dibromomethane	50U		F	1U			1U			1U			1U			1U			1		
Dichlorodifluoromethane	50U		F	1U			1U			1U			1U			1U			1		
m/p-Xylenes	50U		F	1U			1U			1U			1U			1U			1		
n-Butylbenzene	50U		F	1U			1U			1U			1U			1U			1		
o-Xylene	50U		F	1U			1U			1U			1U			1U			1		
sec-Butylbenzene	50U		F	1U			1U			1U			1U			1U			1		
tert-Butylbenzene	50U		F	1U			1U			1U			1U			1U			1		
trans-1,2-Dichloroethene	50U		F	0.49L	J	AE	1U			1U			1U			1U			1		

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No.: 11-BCCO-15.0 SDG No.: 01K027
Site: Omega Chem OU-2
Lab: EMAX
Reviewer: Denise McCaffrey, ESAT/LDC
Date: May 8, 2002

QUALIFIED DATA
Concentration in ug/L

Analysis Type: Water Samples for Volatiles by EPA Method 8260B

Station Description:																					
Sample ID:	GW401-PP083-0082			GW401-PP084-0047			GW401-PP085-0038			GW401-PP085-2007 TB			Method Blank MBLK1W			Method Blank MBLK2W			CRQL		
Collection Date:	11/02/01			11/02/01			11/02/01			11/02/01											
Dilution Factor:	50			1			1			1			1			1					
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Trichlorofluoromethane	390		F	240		G	1U			1U			1U			1U			1		
Vinyl Chloride	100U		F	2U			2U			2U			2U			2U			2		
Acetone	500U	J	CF	53	J	DH	10U	J	D	10U	J	D	10U	J	D	10U	J	C	10		
2-Butanone	500U		F	10U			10U			10U			10U			10U			10		
Carbon Disulfide	50U		F	1U			1U			1U			1U			1U			1		
Toluene	50U		F	1U			1U			1U			1U			1U			1		
Trichloroethene	310		F	250		G	17			1U			1U			1U			1		
Chlorodibromomethane	50U		F	1U			1U			1U			1U			1U			1		
4-Chlorotoluene	50U		F	1U			1U			1U			1U			1U			1		
Tetrachloroethene	460		F	320		G	53		G	1U			1U			1U			1		
Freon 113	1300		F	550		G	6.1	J	E	1U			1U			1U			1		
Ethylbenzene	50U		F	1U			1U			1U			1U			1U			1		
Hexachlorobutadiene	50U	J	DF	1U			1U			1U			1U			1U	J	D	1		
Isopropylbenzene	50U		F	1U			1U			1U			1U			1U			1		
p-Isopropyltoluene	50U		F	1U			1U			1U			1U			1U			1		
Methylene Chloride	50U		F	1U			1U			1U			1U			1U			1		
Napthalene	50U		F	1U			1U			1U			1U			1U			1		
n-Propylbenzene	50U		F	1U			1U			1U			1U			1U			1		
Styrene	50U		F	1U			1U			1U			1U			1U			1		
1,1,1,2-Tetrachloroethane	50U		F	1U			1U			1U			1U			1U			1		
1,1,2,2-Tetrachloroethane	50U		F	1U			1U			1U			1U			1U			1		
1,2,4-Trichlorobenzene	50U		F	1U			1U			1U			1U			1U			1		
1,2,3-Trichlorobenzene	50U	J	DF	1U			1U			1U			1U			1U	J	D	1		
1,1,1-Trichloroethane	50U		F	2.6			1U			1U			2.6			1U			1		
1,1,2-Trichloroethane	50U		F	1U			1U			1U			1U			1U			1		
Methyl t-butyl ether	50U		F	5.9			1U			1U			5.9			1U			1		
Dichlorofluoromethane	NA			NA			NA			NA			NA			NA			NA		

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL - Contract Required Quantitation LImit, N/A - Not Applicable, NA - Not Analyzed

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.